

A Study on Role of Social Networks in Formation of Cyberculture

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Abstract

One of the widest communicating channels refers to social network sites that have affected social relations via the emergence of web-2. The main purpose of the present paper is to study the role of social networks in forming cyberculture. In order to achieve the purposes, the statistical population has been selected. According to the high size of the sample cases and shortness of time, the Cochran formula has been applied. The considered sample size is considered equal to 367 people and it has been analyzed via SPSS. The results of the research indicate that reproduction and cultural creativity of the users of social networks in the form of cultural values, subcultures resulted from cyberspace, and cultural innovation have led to the formation of cyberculture. Moreover, the cyber identity of virtual social networks has affected the formation of cyberculture. At first, the initial structure of internet associated with life was merely presented in web, however, the emergence of social network sites created a new form of life in the cyberspace. Consequently, the culture and relations among people got different from their traditional forms.

Keywords- Cyberculture, Cyberspace, Social network

Introduction

Today, "communication and information" is one of the strong symbols of political power and social; cultural; and economic development of societies at the beginning of the 21st century. The purpose of reaching progress and development of communication sciences in the contemporary period is based on the values and cultures of societies. Therefore, many of the scientists believe that communication is the main core of pattern of democracy in the present world. The pattern could lead to significant successes via developing attractive technologies. Moreover, some of the thinkers declare that multi-media communicating tools and information networks could effectively confront the current problems of societies. In order to reach the purpose, new interactions and co-operations in the regional and global levels seem necessary. The new technologies with high frequencies have influenced life, working environment, and even humans. Today, humans cannot live without technologies. The computer-based relation among humans is increasing. Computers are linked to one another via local networks, global networks, and technology. The wide communication has increased the speed of transferring images, sounds, video, and information. The computer technologies provide the possibility of human-machine interaction and human-human interaction in a cyberspace in a completely new way. Human-human interaction is the basis of culture. Luria's and Vygotsky's cultural development model indicates the need for paying attention to the cyberculture in relation with computer-based human communication. It depends on behavioral and communicating actions that humans have through interacting with the surrounding environment. Luria and Vygotsky (1994) declare that humans take advantage of different psychological structures in order to interact with themselves and their surrounding environment. The structures are

categorized in the form of signs that include verbal and non-verbal communication mechanism. The structures have been categorized in the form of tools that include a wide range of other behavioral methods and patterns. These methods and patterns are learned by society in order to represent the effective performance within a culture. Totally, signs and tools help people analyze data and interact with people and objects. The tools will fail if they confront another space. In the context of internet, humans do not merely interact with digital tools. The tools make humans enter a cyberspace with cultural and communication facilities in order to let them interact with different technologies, culture of cyberspaces, and people. People's cultural actions might be in accordance with cybercultures of the cyberspace. Some researchers believe that social-cultural aspects of computer-based humans' interactions in conveying meaning and making an effective structure are more important than technological considerations. Therefore, the present paper intends to answer to this question whether users of virtual social networks affect the formation of cyberculture or not.

Social virtual networks

Social virtual networks refer to a site or a set of sites where the users share their requests, thoughts, activities, and interests. During these years, social networks have rapidly increased. Social networks are sites that have sharing feature via simple tools such as searching engines, and facilities such as chat rooms and e-mail. Such networks gather millions of internet users with different languages, cultures, and sexes together and let them share information. A social network is a site that let individuals and organizations make their pages on the site, and then it connect the pages to one another based on different common points (Kia and Mahmoudi, 2011, p:17). A social network refers to a community with users that have common-points. A social virtual network also refers to a set of web-sites or technologies based on web2. Such a network influences formal websites via making interactional virtual networks in the cyberspace. These social networks provide the possibility of making wide networks on internet. Sometimes, these networks take their activities through the real space of society (Ziayiparvar, 2009, p:11).

Definition of social networks and networking in the cyberspace

Communication networks are contacting patterns formed among communicators in the frameworks of time and place via flows of messages (Mong and Contractor, 2003), therefore, networks processes the flow of messages. The flows are the information that passes through nodes. The flows are transferred to nodes via communicating channels. A network is a set of interconnected nodes. The networks are flexible and compatible structures which are enhanced by information technology and could do whatever they are planned for. The networks are able to spread unlimitedly and increase the number of nodes via changing their settings, however, the new nodes should not be a barrier to the performance of the network plans. For instance, all or the regions of the world might be connected to the global economic network, but they could be connected up to the time that they add the value of value-making function of the economy. If a region is not useful for the network, it will not be allowed to connect to it anymore. The omission of such regions does not damage the whole network (Castells, 1996, P: 695). There is not a comprehensive definition for social virtual networks; there are many names for it such as social network, online community, virtual community, digital virtual community, and even social network site. The reason for this frequency of names refers to assessments based on hypotheses (Heidman, 2009, p: 2). However, the widest definition is that the online social networks are a specific form of communicating where interactions among network factors are supported by a technical base and internet infrastructure.

In these networks, a common target, interest, or need could be an integrating element that makes relevant factors be in a community without having a physical presence (Ibid). The present paper takes advantage of a definition presented by Boys and Ellison. They believe that virtual social networks are web-based services that let people could make public and semi-public profiles in the

framework of a certain system, share information with other users who are present in that system, and observe a list of links between themselves and others present in that system.

Previously, mutual virtual actions among individuals were done in the space of weblogs or chat rooms. However, in the space of weblogs it is not possible to categorize the content, therefore, all of the posts could be observed by all of the users of the weblogs. Moreover, it is not possible to chat via weblogs; therefore, sending electronic messages or inserting comments are the only ways of being in contact with the owners of weblogs. In a loved social network site such as face book, it is possible to chat visually, specify videos, images, wall-posts, and make the profile visible or invisible for some people, as a result, the interaction among people increases. In weblogs, communication rooms, or other virtual communities, the user enters the space just as a member; however, he cannot select or omit a person for communication. On the other hand, the ability of the page owner to categorize the friends in different groups based on type of the relation, and the possibility of searching for friends in the network are the capabilities that make it possible to have a wide interaction for free production of content and sharing information. Moreover, there are many differences between networks and weblogs; chat rooms; and other available virtual spaces from structural aspect. Networks are structures that could reconstruct themselves, they are complicated communicating structures that pay attention to the unity of target and flexibility of performance; moreover, they are compatible with the operating environment. It should be considered that the capability of networks through the passage of time and by introducing new content and users increases in the process of relative independence and social organizing, and completing information technology (Ellison and Boyd, 2007, p:211).

The origin and requirements for virtual social networks

“Web-2” in the new era of web is a sign of development of cyberspace in the human life. The web-2 has considerably increased the interactions among users and the possibility to share and distribute information and content via some internet tools. Tools and sites of web-2 are called “social media”. Social media include a wide range of internet services such as weblogs, forums, wikis, and sites for sharing images, videos, and links. The growth of web-2 is an amazing phenomenon. It has such a fast rate of growth that some researchers believe that in the future media should be found in web-2 and internet social networks (Creese, 2007).

These networks have a considerable growth both in developed and developing countries. The everyday development of internet-based social networks affects the daily increase of statistics related to members of such sites. For instance, five sites out of ten superior sits have been recognized as social networks (Alexa, 2011). As a result, this area has been considered by researchers as a new field of study. Today, some of the researchers call it the social research studies and electronic social sciences (Ackland, 2009).

At the present time, virtual social networks provide the opportunity for new interactions beyond the traditional communication areas. Such networks present new concepts of network and virtual life as a cyber- community and they emerge as different cultural and semantic bases and non-virtual community equations. In order to recognize ways of confronting this phenomenon, it is necessary to get familiar with cultural roots of the cyberspace.

In the virtual social networks, the concept of user is used instead of the traditional concept of addressee, because the relations in these networks are based on interaction. Consequently, the user is not only a consumer of the content but also a producer of the content via a public and non-concentrated process. Today, social media as a set of capabilities for networking in the cyberspace compete with the public media. Books, radio, television, the press, and some of the primary capabilities of the cyberspace are called public media. In the public media, the addresses are only the receivers of the media messages, though in the social media the users not only receive messages

but also send messages. They could take advantage of social internet-based networks such as weblogs, micro-weblogs, and other forms of social media in order to distribute their produced content and personal media. In the virtual social networks, the capability of adding different people to the communicating network has provided a specific networking power for these networks. The power of networking in internet-based social networks is very high as a result of high-speed of cyberspace and anonymous formal observation. Therefore, the power of networking should seriously be considered and it depends on precise recognition of threats and opportunities of social networks regarding external factors and the necessity of paying attention to strengths and weaknesses.

The structure and features of virtual social networks

From structural perspective, it is possible to simulate the interrelations within a virtual social network via a graphical diagram that includes a limited number of nodes and also a number of links among the nodes. In this graphical model, the links determine who is in contact with another person, they also indicate the social interactions among network factors (Koch and Schlosser in Haidman , 2010, p:4).

In this process, hubs which have more links with other network-factors could also be observed. Contrary to the traditional social networks, web-based networks clarify each of the factors in the communication network. This feature is used by many of the virtual social networks for visualization process. Though social networks and especially virtual social networks are considered by different research studies, knowledge of network research studies is still unsatisfactory. Therefore, Stanley Milgram, the American psychologist, used the results of his research studies in the middle of 1930s and made this theory that anyone in the world knows his fellowman at least from six degrees. In this relation, six degrees of separation have also been explained (Heidmann, 2010, p: 5; Milgram, 1967).

Literature review

The recent authors believe that the cultural space of cyberspace is completely new and related to the post-modern period and it is a sign of a fundamental rupture in the cultural patterns of society, identity, and communication. For instance, Webb believes that boundary images of the cyberspace indicate a post-modern change from a restricted human to an unrestricted human who has access to computer. Poster (2000) asserts that internet-based technologies have created a second culture. This culture is different from simultaneous exchange of signs and sounds among people in a real space (p: 130). He predicts that cultural consequences of this innovation should lead to the destruction of “modern” culture. Therefore, some parts of the post-modern theories of thinkers such as Foucault, Heidegger, Deleuze, Baudrillard, and Derrida that have challenged modern beliefs in relation with progress, identifiable personality, and presence of absolute principles for the structure of science are redefined.

Anderson (1997) believes that the values of cyberculture are verbal, free, and accessible values that are ready for reacting (p: 13). Castells believe that hacker culture is the basis of cyberculture and the meritocratic values convey the concepts of a cyberspace and high personal freedom. Jordan (1999) believes that the cyberculture is a force that makes the culture, politics, and economy. It also defines the power of technology as a power that forms the normative system of the cyberculture.

Star (1995) declares that it is not guaranteed whether the interaction in the network follows racial, sexual, and class discriminations that exist in other forms of communication or not (P:8) Shields has studied issues such as censorship, social interaction, colonialism policy, and sex-based actions in a collection of edited articles (1996). However, others believe that the cyberspace causes a

completely new culture. Levy believes that the cyberculture is the emergence of a different and global culture. The difference is the result of absence of biases in perceiving the world (p: 100). Moreover, Healy (1997) believes that a cyberspace is a space between nomadism and civilization. The cultural tendencies and options are selected from this space.

The main research hypothesis

There is a significant relation between social networks and the formation of cyberculture.

Sub-hypotheses

- There is a significant relation between users' cultural reproduction in social networks and the formation of the cyberculture.
- There is a significant relation between users' cultural creativity in social networks and the formation of the cyberculture.
- There is a significant relation between users' cyber-identity in social networks and the formation of the cyberculture.
- There is a significant relation between users' dual-globalization via social networks and the formation of the cyberculture.
- There is a significant relation between users' network relations in social networks and the formation of the cyberculture.

Methodology

The present research is an applied research and regarding method, it follows a survey method. The research environment includes male and female students at B.A. level of social sciences and communication fields related to the governmental universities of Tehran and faculty of social sciences of Islamic Azad University (Tehran-jonoub unit). Since such students are more involved in social-cultural issues especially in the areas of cyberspace and cyberculture, it seems that they make the highest population of social networks users whose population exceeds 8000 people. With regard to the high size of statistical population, time limitation, and limitation of budget, the Cochran formula is used to determine the sample size. The sample size equals 367 people and the researcher's questionnaire is the tool for collecting data in the present paper. The questionnaire has been formed regarding studies, observations, and opinions of the professors of the communication field in the demographic information section. The questionnaire is ranked based on Likert spectrum and it is analyzed via SPSS, one-sample T-test, and linear regression analysis test. The non-parametric Friedman test has also been used to prioritize aspects of virtual social networks.

Results and Discussion

With regard to the results of the second section of the questionnaire (demographic characteristics), the following information related to the characteristics of the statistical sample has been presented briefly.

Sex: 44.6 percent of the statistical sample is male and 55.4 percent of the statistical sample is female.

Age group: 42.5 percent of the sample members are 20-22 years old, 24.8 percent of them are 23-25 years old, 20.4 percent of them are 26-28 years old, and finally 12.4 percent of them are 29-30 years old.

The university: 23.1 percent of the considered statistical members have been studying at Shahid Beheshti University, 21.7 percent at Shahid Modares University, 18.7 percent at Alameh

Tabatabaei University, 25.1 percent at Tehran University, and 11.7 percent at Islamic Azad University of Tehran-Jonoub unit.

Inferential findings

In order to study the normality of research data, the statistic and Kolmogorov-Smirnov test have been applied. The results have been presented in table 1.

Table 1: Results of Kolmogorov-Smirnov test for investigating the information distribution in social networks

Hypothesis	Cultural reproduction	Cultural creativity	Cyber-identity	Dual globalization	Network relations
Number	367	367	367	367	367
Z statistical value	4.469	3.512	4.642	5.342	5.622
Significance	0.000	0.000	0.003	0.001	0.000

The results of the test indicate that the value of Kolmogorov-Smirnov test for all of the hypotheses is more than the level of significance; therefore, the distribution of samples is not normal. In other words, there is a significant difference between the observed frequencies distribution and normal distribution; therefore, the population distribution is not normal. Consequently, one-sample T test and linear regression analysis have been used to test the research hypotheses; moreover, the non-parametric Friedman test has been applied to prioritize components of the virtual social networks. The results are presented in the following tables.

Tests of hypotheses

- There is a significant relation between users' cultural reproduction in social networks and the formation of the cyberculture.

Table 2: One- sample statistic

One sample statistic				
Cultural reproduction	Total number	Mean	Standard deviation	Mean deviation
	367	2.7907	.53687	.02310

Table 3: One- sample test

Cultural reproduction	T-value	Degree of freedom	Error level (significance)	Mean deviation	High coefficient	Low coefficient
	120.785	366	0.000	2.79064	2.8261	2.7554

According to the results of one-sample T test, the above test is significant with more than 99 percent of confidence ($P < 0.05$). In other words, based on the opinions of the statistical population, users' cultural reproduction via social networks affects the formation of cyberculture. The question is how it affects the formation of cyberculture. The statistical results of the above table indicates that the mean of opinions of the majority of respondents has been less than the mean level ($m = 2.79$). Therefore, the majority of respondents believe that the increase of users' cultural reproduction via

social networks leads to the increase of users' formation of cyberculture. As a result, there is a direct and significant relation between these two variables.

Therefore, proper planning is needed to use social networks with the purpose of cultural enhancing, producing, and reproducing of users within the virtual social networks with emphasis on the real culture. For instance, the relevant entities increase the use of new communicating technologies especially social networks via educating culture; moreover, they help users of the social networks via increasing capacities of the real culture.

- There is a significant relation between users' cultural creativity in social networks and the formation of the cyberculture.

Table 4: One- sample statistic

One sample statistic				
Cultural creativity	Total number	Mean	Standard deviation	Mean deviation
	367	2.0537	.88425	.03805

Table 5: One- sample test

Cultural creativity	T-value	Degree of freedom	Error level (significance)	Mean deviation	High coefficient	Low coefficient
	53.871	366	0.000	2.05370	2.1385	1.9690

According to the results of one-sample T test, the above test is significant with more than 99 percent of confidence ($P < 0.05$). In other words, based on the opinions of the statistical population, users' cultural creativity via social networks affects the formation of cyberculture. The question is how it affects the formation of cyberculture. The statistical results of the above table indicates that the mean of opinions of the majority of respondents has been less than the mean level ($m = 2.05$). Therefore, the majority of respondents believe that the increase of users' cultural creativity via social networks leads to the increase of users' formation of cyberculture. As a result, there is a positive and significant relation between these two variables.

- There is a significant relation between users' dual globalization via social networks and the formation of the cyberculture.

Table 6: One- sample statistic

One sample statistic				
Dual globalization	Total number	Mean	Standard deviation	Mean deviation
	367	2.8299	1.02279	.05709

Table 7: One- sample test

Dual globalization	T-value	Degree of freedom	Error level (significance)	Mean deviation	High coefficient	Low coefficient
	49.572	366	0.000	2.82991	2.9422	2.7176

According to the results of one-sample T test, the above test is significant with more than 99 percent of confidence ($P < 0.05$). In other words, based on the opinions of the statistical population,

users' dual globalization via social networks affects the formation of cyberculture. The question is how it affects the formation of cyberculture. The statistical results of the above table indicates that the mean of opinions of the majority of respondents has been less than the mean level ($m= 2.82$). Therefore, the majority of respondents believe that the more the users experience a new and virtual world and have a sense of belonging to the virtual world, the more the cyberculture is formed among users of the social networks. As a result, there is a positive and significant relation between these two variables.

- There is a significant relation between users' cyber-identity in social networks and the formation of the cyberculture.

Table 8: one- sample statistic

One sample statistic				
Cyber-identity	Total number	Mean	Standard deviation	Mean deviation
	367	2.6386	1.17537	.06560

Table 9: one- sample test

Cyber-identity	T-value	Degree of freedom	Error level (significance)	Mean deviation	High coefficient	Low coefficient
	40.221	366	0.000	2.63863	2.7677	2.5096

According to the results of one-sample T test, the above test is significant with more than 99 percent of confidence ($P<0.05$). In other words, based on the opinions of the statistical population, users' cyber-identity via social networks affects the formation of cyberculture. The question is how it affects the formation of cyberculture. The statistical results of the above table indicates that the mean of opinions of the majority of respondents has been less than the mean level ($m= 2.63$). Therefore, the majority of respondents believe that the presence at the cyberspace and social networks leads to the users' formation of cyberculture. As a result, there is positive and significant relation between these two variables. Therefore, the relevant organizations should provide the required plans for protecting users' real, Islamic, and Iranian identity. Moreover, the protection of the Islamic-Iranian culture is emphasized both in the real space and cyber space.

- There is a significant relation between users' network relations in social networks and the formation of the cyberculture.

Table 10: one- sample statistic

One sample statistic				
network relations	Total number	Mean	Standard deviation	Mean deviation
	367	2.0187	.84204	.04700

Table11: one- sample test

network relations	T-value	Degree of freedom	Error level (significance)	Mean deviation	High coefficient	Low coefficient
	42.953	366	0.000	2.01869	2.1112	1.9262

According to the results of one-sample T test, the above test is significant with more than 99 percent of confidence ($P < 0.05$). In other words, based on the opinions of the statistical population, users' network relations via social networks affect the formation of cyberculture. The question is how it affects the formation of cyberculture. The statistical results of the above table indicates that the mean of opinions of the majority of respondents has been less than the mean level ($m = 2.01$). Therefore, the majority of respondents believe that the increase of users' on-line communication via social networks and cyberspace leads to the network relations, consequently, users' cyberculture is formed. As a result, there is a positive and significant relation between these two variables. Therefore, proper planning is needed to protect users' personal-social relations in the real world in order to enhance the national and Islamic culture. Moreover, the required cultural education is needed for users to let them use new communicating technologies and social networks, while they respect the real culture along with the cyberculture resulted from globalization and emergence of the considered social networks.

Table 12: Mean of ranks related to the variables of virtual social networks

mean of ranks related to the variables of virtual social networks		
Variables		Mean of ranks
Cultural reproduction		4.53
Cultural creativity		3.50
Cyber-identity		2.64
Dual globalization		2.71
Network relations		1.62
Chi-square: 625.035	Degree of freedom: 5	Level of significance: 0.000

In order to prioritize aspects of virtual social networks, the non-parametric Friedman test has been used. The results indicate that there is a significant difference among the aspects of social networks at confidence level of 0.95 percent, and error level of 0.05. The rank means of cultural reproduction (4.53), cultural creativity (3.50), dual globalization (2.71), cyber-entity (2.64), and network relations (1.62) respectively indicate the priority and effect of social networks aspects on the formation of cyberculture.

Conclusions

There is a significant relation between users' cultural reproduction in the virtual social networks and the formation of cyberculture. The users' paying attention to different cultures, sub-cultures, and cultural values in the social networks leads to the formation of cyberculture. The finding is associated with Anderson's findings and Castells' findings. Anderson (1997) believes that the values of cyberculture are verbal, free, and accessible values that are ready for reacting (p: 13). Castells believe that hacker culture is the basis of cyberculture and the meritocratic values convey the concepts of a cyberspace and high personal freedom.

There is a significant relation between users' cultural creativity in virtual social networks and the formation of their cyberculture. In other words, when users take advantage of virtual social networks to reach cultural innovation, creation of new cultures, and global culture, they also cause

the formation of the cyberculture and a second culture. This finding is in association with Poster's finding that declares internet technologies have created a second culture.

There is a significant relation between users' cyber-identity in virtual social networks and their formation of cyberculture. The traditional and national identity of users in cyberspace and social networks has been influenced by global norms and values and the phenomenon of globalization, and it has formed the cyber-identity. According to the research findings, the variable of cyber-identity leads to the formation of users' cyberculture.

There is a significant relation between users' dual globalization via using virtual social networks and the formation of cyberculture. The confrontation of users with a different, new, and global culture within the virtual social networks leads to the formation of users' cyberculture. The findings are associated with Levy's findings and Healy's findings. Levy believes that the cyberculture is the emergence of a different and global culture. The difference is the result of absence of biases in perceiving the world (p: 100). Moreover, Healy (1997) believes that a cyberspace is a space between nomadism and civilization. The cultural tendencies and options are selected from this space.

There is a significant relation between users' network relations in the virtual social networks and the formation of cyber-culture. The more users make modern and virtual relations with different sites for scientific, business, entertaining, and other affairs, the more they lead to the formation of users' cyberculture. The finding is associated with Webb's finding. He believes that boundary images of the cyberspace indicate a post-modern change from a restricted human to an unrestricted human who has access to computer. The network relations indicate that interpersonal and intercultural changes are resulted from virtual changes of network communities and virtual social networks. Therefore, this variable affects the formation of cyberculture.

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